

**Fully-depleted-collector Silicon-on-Insulator (SOI) bipolar transistor
useful alone or in SOI BiCMOS**

ABSTRACT OF THE INVENTION

5 A bipolar transistor structure is described incorporating an emitter, base, and collector
having a fully depleted region on an insulator of a Silicon-On-Insulator (SOI) substrate without
the need for a highly doped subcollector to permit the fabrication of vertical bipolar transistors on
semiconductor material having a thickness of 300 nm or less and to permit the fabrication of SOI
BiCMOS. The invention overcomes the problem of requiring a thick semiconductor layer in SOI
to fabricate vertical bipolar transistors with low collector resistance.